

ABSTRACT OF THE DISCLOSURE

An acoustic-to-electrical transducer for sensing body sounds is disclosed. The transducer comprises a diaphragm that can be placed in direct contact with a body, whereby the diaphragm motion directly affects an electromagnetic sensing signal, which is then converted to an electrical signal representation of the diaphragm motion. Such sensing means allows the diaphragm to move freely without mechanical coupling to a secondary transducer, while providing a direct and efficient acoustic to electrical conversion means. The transducer further provides a means for using static diaphragm pressure to control gain and frequency characteristics of the electrical signal. The transducer provides methods for ambient noise reduction or cancellation, as well as means for simulating sound detection for applications such as medical education and testing. The sensor, circuitry, manufacturing methods and improvements are disclosed.

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